V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention of claim 1 is directed to a computer-implemented method of determining predictive models for a linked event detection system as shown in FIG. 2, including: determining source-identified training stories, determining inter-story similarity vectors in a memory **20** (FIG. 4) for at least one story-pair of the source-identified training stories, determining link label information for the at least one story-pair, and determining and storing at least one predictive model in the memory based on the inter-story similarity vectors and the link label information. The link label information indicates the existence of at least one link between a pair of stories in the source-identified training stories and that the linked source-identified stories are related to the same event.

A processor **15**, as shown in FIG. 4 of the specification, performs the step of determining source-identified training stories and the step of determining link label information as described on page 20, line 20 – page 21, line 3. The step for determining inter-story similarity vectors is performed by an inter-story similarity determining circuit **40** as described on page 21, line 28 – page 22, line 30. The step for determining and storing at least one predictive model is performed by a predictive model determining circuit **50** as described on page 20, lines 20-33.

The invention of claim 2 is directed to the computer-implemented method of claim 1, further including, as shown in FIG. 2, determining an inter-story similarity metric for the story-pairs, and determining source-pair statistics for the story-pairs for the inter-story similarity vectors recited in claim 1.

The invention of claim 20 is directed to a linked event detection training system that includes an input/output circuit **10** (FIG. 4), a memory **20**, and a processor **15**, as shown in FIG. 4, that receives source-identified training stories and associated link label information for at least one story-pair via the input/output circuit. This recited limitation is described starting on page 20, line 31, of the original specification, and continuing to page 31, line 3, where a user of personal computer **300** as shown in FIG. 4 initiates a request over communications link **99** to the link detection system **100** to determine a predictive model for the link detection system **100**. The request is received by the link detection system **100**, and the processor **15** activates the input/output circuit 10 to retrieve the source-identified stories **1000-1002** over communications link 99 and store the source-identified stories in memory **20**. As also recited in the claim, and described on page 5, lines 17-19, the link label information indicates the existence of at least one link between a pair of stories in the source-identified training stories and that the linked source-identified stories are related to the same event. Also included in the system is an inter-story similarity vector determining circuit **40, 45** that determines inter-story similarity vectors in the memory for at least one story-pair of the source-identified training stories as described from page 3, line 32, through page 4, line 4, inter-story similarity metrics are determined and source-pair similarity statistics are also determined and used to normalize the inter-story similarity metrics. The inter-story similarity metrics and the normalized source-pair similarity statistics are combined to form a similarity vector for each pair of stories. As further described on page 21, line 28, through page 22, line 30, the similarity metric component of the similarity vectors is determined by circuit **40**. Exemplary similarity metrics are described such as the Hellinger metric, the Tanimoto metric, the clarity-

distance metric, and the cosine-distance metric. The source pair statistics component of the similarity vectors is determined by the similarity statistics determining circuit **45**. Exemplary statistics described include the running median, mean, variance and the like. Further included is a predictive model determining circuit **50** that determines and stores at least one predictive model in the memory based on the inter-story similarity vectors and the link label information. This recited feature of determining a predictive model is discussed in further detail on page 22, lines 4-11, where exemplary use of a support vector machine, a decision tree inducer, a classifier or any other known method is described.

The invention of claim 21 is directed to the linked event detection training system of claim 20, further including, as shown in FIG. 2, a similarity metric determining circuit that determines an inter-story similarity metric for the story-pairs, and a similarity statistics determining circuit that determines source-pair statistics for the story-pairs for the inter-story similarity vectors recited in claim 20.

The invention of claim 39 is directed to a computer-implemented method of linked event detection as shown in FIG. 3, including: determining source-identified training stories, determining inter-story similarity vectors in a memory **20** (FIG. 4) for at least one story-pair of the source-identified training stories, determining at least one predictive model in the memory for link detection, determining a link between the story-pairs based on the predictive model and the inter-story similarity vector, and displaying the link on a computer **300** or storing the link in an information repository **200**. The link indicates that the story-pairs are related to the same event.

A processor **15**, as shown in FIG. 4 of the specification, performs the step of determining source-identified training stories as described on page 20, line 20 – page

21, line 3. The step for determining inter-story similarity vectors is performed by an inter-story similarity determining circuit **40** as described on page 21, line 28 – page 22, line 30. The step for determining at least one predictive model is performed by a predictive model determining circuit **50** as described on page 20, lines 20-33. The step for determining a link between the story-pairs is performed by a link determining circuit **55** as described on page 22, lines 20-30. The step for displaying the link on a computer or storing the link in an information repository is performed by the link determining circuit.

The invention of claim 40 is directed to the computer-implemented method of claim 39, further including, as shown in FIG. 3, determining an inter-story similarity metric for each story-pair, and determining source-pair statistics for the story-pairs for the inter-story similarity vectors recited in claim 39.

The invention of claim 58 is directed to a linked event detection system that includes an input/output circuit **10** (FIG. 4), a memory **20**, and a processor **15**, as shown in FIG. 4, that receives source-identified stories via the input/output circuit. This recited limitation is described starting on page 20, line 31, of the original specification, and continuing to page 31, line 3, where a user of personal computer **300** as shown in FIG. 4 initiates a request over communications link **99** to the link detection system **100** to determine a predictive model for the link detection system **100**. The request is received by the link detection system **100**, and the processor **15** activates the input/output circuit 10 to retrieve the source-identified stories **1000-1002** over communications link 99 and store the source-identified stories in memory **20**. An inter-story similarity vector determining circuit **40, 45** determines inter-story similarity vectors in the memory for the story-pairs of the source-identified stories as described from page 3, line 32, through page 4, line 4, inter-

story similarity metrics are determined and source-pair similarity statistics are also determined and used to normalize the inter-story similarity metrics. The inter-story similarity metrics and the normalized source-pair similarity statistics are combined to form a similarity vector for each pair of stories. As further described on page 21, line 28, through page 22, line 30, the similarity metric component of the similarity vectors is determined by circuit **40**. Exemplary similarity metrics are described such as the Hellinger metric, the Tanimoto metric, the clarity-distance metric, and the cosine-distance metric. The source pair statistics component of the similarity vectors is determined by the similarity statistics determining circuit **45**. Exemplary statistics described include the running median, mean, variance and the like. A link determining circuit **55** determines and displays on a computer **300** or stores in an information repository **200**, links between story-pairs based on a predictive model in the memory and the inter-story similarity vectors. The links indicate that the story-pairs are related to the same event. Operation of the link determining circuit **55** is described in more detail on page 22, lines 21-30. The recited predictive model is discussed in further detail on page 22, lines 4-11, where the predictive model is determined based on link label information, the similarity metrics and the source-pair similarity statistics for each story-pair.

The invention of claim 59 is directed to the linked event detection system of claim 58, further including, as shown in FIG. 3, a similarity metric determining circuit that determines an inter-story similarity metric for the story-pairs, and a similarity statistics determining circuit that determines source-pair statistics for the story-pairs for the inter-story similarity vectors recited in claim 58.

The invention of claim 77 is directed to a method of determining a stopword list as shown in FIG. 5. The method includes determining a source-identified training corpus of text information as described on page 23, lines 7-10, where the training corpus may be created from automatically recognized speech utterances transcribed to text, text files from a digital library, HTML or web pages served by a web server, or any known or later developed information source. The method further includes determining a verified first source-mode transformation of the source-identified training corpus text from a first mode to a second mode based on a verified transcription or a verified translation. This recited feature is described on page 23, lines 11-18, with various exemplary transformations described. The claim also recites determining an un-verified second source-mode transformation of the source-identified training corpus text from a first mode to a second mode as described on page 23, lines 20-25, and determining at least one transformation error associated with distribution differences between the first and second transformations and identified sources as described on page 23, lines 26-32. The method finally recites determining and storing at least one source-specific transformation action for the determined transformation errors in a memory **20** (FIG. 4), and identifying and transforming transformation errors in other transformed source-identified texts based on the source-specific transformation actions in the memory. Exemplary transformation actions such as repair are described on page 24, lines 8-17.

A processor **15**, as shown in FIG. 4 of the specification, performs the steps of determining a source-identified training corpus, determining a verified first source-mode transformation, determining an un-verified second source-mode transformation, determining at least one transformation error, determining and storing at least one source-

specific transformation action, and identifying and transforming transformation errors in other transformed source-identified texts based on the source-specific transformation actions in the memory.

The invention of claim 81 is directed to computer readable storage medium comprising computer readable program code embodied on the computer readable storage medium. The computer readable program code is processable to program a computer **15** to determine at least one predictive model for a linked event detection system **100** by executing the following recited steps. Claim 81 recites steps, as shown in FIG. 2, for determining source-identified training stories, determining inter-story similarity vectors in a memory **20** (FIG. 4) for at least one story-pair, determining link label information for the at least one story-pair, and determining and storing at least one predictive model in the memory based on the inter-story similarity vectors and the link label information. The link label information indicates the existence of at least one link between a pair of stories in the source-identified training stories and that the linked source-identified stories are related to the same event.

A processor **15**, as shown in FIG. 4 of the specification, performs the step of determining source-identified training stories and the step of determining link label information as described on page 20, line 20 – page 21, line 3. The step for determining inter-story similarity vectors is performed by an inter-story similarity determining circuit **40** as described on page 21, line 28 – page 22, line 30. The step for determining and storing at least one predictive model is performed by a predictive model determining circuit **50** as described on page 20, lines 20-33.

The invention of claim 82 is directed to computer readable storage medium comprising computer readable program code embodied on the computer readable storage medium. The computer readable program code is processable to program a computer **15** to determine at least one predictive model for a linked event detection system **100**. Each of the instructions limitations in claim 82 recites a §112, 6th paragraph, means-plus-function limitation and the disclosed structures, materials, or acts described in the specification that correspond to the claimed step are identified with reference to FIG. 4. The computer readable program code includes instructions for determining source-identified training stories (processor **15**, page 20, line 20 – page 21, line 3), instructions for determining inter-story similarity vectors in a memory **20** for at least one story-pair (circuit **40**, page 21, line 28 – page 22, line 30), instructions for determining link label information (processor **15**, page 20, line 20 – page 21, line 3) for the at least one story-pair, and instructions for determining and storing at least one predictive model in the memory based on the inter-story similarity vectors and the link label information (circuit **50**, page 20, lines 20-33). The link label information indicates the existence of at least one link between a pair of stories in the source-identified training stories and that the linked source-identified stories are related to the same event.

The invention of claim 83 is directed to computer readable storage medium comprising computer readable program code embodied on the computer readable storage medium. The computer readable program code is processable to program a computer **15** to detect linked events by executing program steps. Claim 83 recites steps, as shown in FIG. 3, for determining source-identified training stories, determining inter-

story similarity vectors in a memory **20** (FIG. 4) for at least one story-pair of the source-identified training stories, determining at least one predictive model in the memory for link detection, determining a link between the story-pairs based on the predictive model and the inter-story similarity vectors, and displaying the link on a computer **300** or storing the link in an information repository **200**. The link indicates that the story-pairs are related to the same event.

A processor **15**, as shown in FIG. 4 of the specification, performs the step of determining source-identified training stories as described on page 20, line 20 – page 21, line 3. The step for determining inter-story similarity vectors is performed by an inter-story similarity determining circuit **40** as described on page 21, line 28 – page 22, line 30. The step for determining at least one predictive model is performed by a predictive model determining circuit **50** as described on page 20, lines 20-33. The step for determining a link between the story-pairs is performed by a link determining circuit **55** as described on page 22, lines 20-30. The step for displaying the link on a computer or storing the link in an information repository is performed by the link determining circuit.

The invention of claim 84 is directed to directed to computer readable storage medium comprising computer readable program code embodied on the computer readable storage medium. The computer readable program code is processable to program a computer **15** to detect linked events. Each of the instructions limitations in claim 84 recites a §112, 6th paragraph, means-plus-function limitation and the disclosed structures, materials, or acts described in the specification that correspond to the claimed step are identified with reference to FIG. 4. The computer readable program code includes instructions for determining source-identified training stories (processor

15, page 20, line 20 – page 21, line 3), instructions for determining inter-story similarity vectors in a memory **20** for at least one story-pair of the source-identified training stories (circuit **40**, page 21, line 28 – page 22, line 30), instructions for determining at least one predictive model in the memory for link detection (circuit **50**, page 20, lines 20-33), instructions for determining a link between the story-pairs based on the predictive model and the inter-story similarity vectors (link determining circuit **55**, page 22, lines 20-30), and instructions for displaying the link on a computer **300** or storing the link in an information repository **200** (performed by the link determining circuit **55**). The link indicates that the story-pairs are related to the same event.

Respectfully submitted,

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